

Information Science and Technology Seminar Speaker Series



Mark J. Embrechts
Rensselaer Polytechnic Institute

A Brief History of Big Data Analytics

Wednesday, March 25, 2015

3:00 - 4:00 PM

TA-3, Bldg. 1690, Room 102 (CNLS Conference Room)

Abstract: The phenomena of Big Data and Analytics bring a new life to the discipline of data mining. This talk will define and trace the origin of big data and answer the where, when, and why of Big Data Analytics. Big Data Analytics (BDA) is more than Data Mining (DM) on steroids. The vast amount of data mandates novel algorithmic approaches to Big Data Analytics. But there is more to come: Big Data often has a significant crowdsourcing aspect and now places a heavy emphasis on data cleansing, outlier detection, and the cloud. Because of the nature of the data (often text and images) the first challenge for Big Data Analytics is now on structuring the data.

This talk will highlight the differences between Data Mining and Big Data Analytics and why an engineering approach is necessary for data-driven science and engineering applications of Big Data Analytics.

Biography: Mark Embrechts is Chief Science Officer (CSO) at CardioMag Imaging, Inc. and a Professor in the Department of Mechanical Aerospace and Nuclear Engineering (MANE) at Rensselaer. He is also a Full Professor in the Department of Industrial and Systems Engineering (ISE). He also holds a joint appointment in Information Technology and is a frequent Guest Professor at the Department of Electrical Engineering / Computer Science at the University of Kassel (Deutschland). Before joining RPI in 1983 he was a Laboratory Director's Postdoctoral Fellow and Staff Member at Los Alamos National Laboratory. He was a visiting professor of Electrical Engineering at the University of Porto (Portugal), and Guest professor of Metallurgy and Materials at the University of Leuven (Belgium). His current interests are neural networks, computational intelligence, text mining, data mining, machine learning, computer-aided drug design, and big data.

Prof. Embrechts introduced pioneering courses in Big Data Analytics, Data Mining, Fractals and Chaos, Computational Intelligence, and Neural Networks. He has over 200 archival publications, edited several books, and is currently working on four books all related to Nuclear Engineering and/or Advanced Quantum Mechanics. He is coauthor of the Book Exchange Rate Theory: Chaotic Models of Foreign Exchange Markets.

Prof. Embrechts has consulted for Los Alamos National Laboratory, the Max Planck Institute for Plasma Physics (Garching bei München, Germany), Paul Scherrer Institute (Villingen, Switzerland), Nikkei Corporation (Japan), World Bank (Washington DC), Oak Ridge National Laboratory. SCVKv, Belgian Nuclear Research Center (Mol, Belgium), General Electric (Schenectady, NY), Kodak (Rochester, NY), TransScan (Israel), and several pharmaceutical companies.

For more information contact the technical host Donald Dudziak, dudziak@lanl.gov, 667-7983.

Hosted by the Information Science and Technology Institute (ISTI)